

Aim of the study was to compare two simultaneously recorded R-R intervals and the subsequent analysis of HRV, one obtained from the Polar S810i heart rate monitor (co. polar electro), and one deriving from the nexus-4 biofeedback device (co. mindmedial). The R-R intervals of both measurement systems were analyzed with the software kubios HRV version 2.0 (Niskanen, Tarvainen, Ranta-Aho, & Karjalainen, 2004). A total of 25 male pupils (age: 12.24 ± 0.72 yr; height: 1.57 ± 0.07 m; mass: 47.2 ± 9.84 kg) completed a test series which started with a five minute relaxation phase in sitting position, followed by a seven minute ergometer test (2.5W/kg mass), and concluded by another five minute relaxation phase at the end.

For both relaxation phases, satisfactory time-domain correlations between Polar S810i and nexus-4 HRV-data were obtained ($r = .80$ to $.97$), whereas the intercorrelations of frequency-domain data display a wide range ($r = .17$ to $.95$). HRV-parameters recorded during the ergometer test, and hence reflecting physiological stress, demonstrate low correlations concerning time-domain ($r = .09$ to $.40$) and frequency-domain ($r = -.02$ to $-.60$). Kubios HRV-software analyses confirm these results with moderate to high time-domain correlations ($r = .71$ to $.99$), and low to high frequency-domain correlations ($r = .46$ to $.97$) between polar and nexus-4 data during relaxation. Additionally, HRV-parameters during physiological stress show low to moderate correlation values ($r = .05$ to $.73$).

In sum, the Nexus-4 biofeedback device seems not to be appropriate for the recording of R-R intervals, and the subsequent analysis of HRV in physical stress conditions. It is recommended to use scientific software for the analysis of HRV, such as kubios HRV.

REFERENCES

- Niskanen, J. P., Tarvainen, M. P., Ranta-Aho, P. O., & Karjalainen, P. A. (2004). Biomed, 76(1), 73-81.
Vanderlei, L. C. M., Silva, R. A., Postle, C. M., Azevedo, F. M., & Godoy, M. F. (2008). Brazilian Journal of Medical and Biological Research, 41(10), 854-859.

BODY IMAGE PERCEPTION OF BRAZILIAN SAILORS' ATHLETES

OLIVEIRA, F., RENAN, R.C., AMEXOIEIRA, M.F., SILVA, D.S.

FEDERAL UNIVERSITY OF RIO DE JANEIRO

Introduction: Social pressures and/or the search for a better physical performance in sports may cause the dissatisfaction with body image (BI). In some sports where the beauty, the lightness or a low body weight may contribute to the best performance, the perception of the BI can be change. **Objective:** The main of this study is analyzing the sailor's athletes BI satisfaction and the perceptud of Body Fat. **Material and Method:** Seventeen sailors athletes were evaluated (18.3 \pm 7.4years) and 12 young non-athletes (control, 19.50 \pm 1.78years). The body composition was measured by the anthropometric method (International Society for Advancement in Kinanthropometry - ISAK). The items measured were: skinfold thickness (Cescroft calipers, 0,1mm), height (stadiometer, 1mm) and total body mass (electronic scale, 50g). The body density was obtained by the Withers et al. (1956), and the relative body fat was estimated by the Siri equation (1961). The degree of satisfaction with the BI was obtained by the Body Shape Questionnaire (BSQ) with a version translated and validated to Portuguese language. The statistical analysis was done on Microsoft Excel 2000. Data is expressed by occurrence percentage, averages, standard deviation. The Pearson correlation test was applied to check the relation among BI and %BF and the group similarity was done by T-Student test. The Ethics Committee of the Clementino Fraga Filho Hospital-UFRJ approved this study and all the parents signed an informed consent from agreeing to the procedures to be adopted and authorizing the scientific use of the study results, as required by the Brazilian Health National Board regulation n° 196/96. **Results and Discussions:** The athletes showed similar results ($p > 0.05$) to the non-athletes for, age ($p = 0.53$), total body weight ($p = 0.29$), height ($p = 0.11$) and body fat (%BF, $p = 0.79$). One should highlight the significant number of interviewees that presents no BI dissatisfaction, fact that does not prevents a concern with the existence of results showing light dissatisfaction (athletes=24% control=33%), mild dissatisfaction (athletes=6% control=8%), and severe dissatisfaction (athletes=6% control=0%). There was a positive correlation between the result of BI dissatisfaction and the higher %BF (athletes=0.65; non-athletes=0.58), which might not be explain changes in BSQ because the %BF levels was classified as the expected standard in terms of gender and age. **Conclusions:** The normal %BF presented in the low groups analyzed is not a justification of the BI dysfunctions detected. The BI dissatisfaction needs to be fighting off in the sports environment and among young people because, in general, it is precursor of the eat disease.

14:15 - 15:15

Poster presentations

PP-PS03 Psychology 3

THE ROAD TO EXCELLENCE: EXPERT PERFORMANCES IN TENNIS AND ALPINE SKIING

MARCONI, M., CONZELMANN, A.

UNIVERSITY OF BERN

Introduction: Within different domains (e.g. music) Ericsson (1996) described the „road to excellence“. Taking this expertise research into consideration, the career path of top-performance athletes in tennis and alpine skiing were analysed in two different studies with a retro-spective approach. The career in sports is viewed as part of the entire life-course (Moyer, 1990) that embraces various careers in (individual) fields of life. The sports career is embedded in the top-performance sports system but also involves a certain dependency on other aspects of life (e.g. family, profession).

Methods: The data was collected by postd enquiry. The questionnaires, adapted to the different characteristics of tennis and alpine skiing, were sent to active and former athletes (tennis: $n=70$; alpine skiing: $n=51$). These include questions concerning activities and incidents in various areas of life, particularly sports, but also family and education / profession.

Results: Certain steps from one to the other period in a career in sports can vary considerably, for example 'age at the beginning with sports' (tennis/alpine skiing: mean=6.9/3.4, range=3-12/2-7) or 'age at the beginning with adult competition' (tennis and alpine skiing: mean=15.4, range=13-18). The individual career paths show partly distinct differences compared to the career path intended in the talent development programmes, diverse chronological sequences in performance development and gender-specific characteristics. Com-

pared to less successful athletes, top athletes have a higher rate of development and, from the beginning of their career, increased training units close to competition.

Discussion: The talent development programmes should consider the individuality of the career paths as well as the gender-specific aspects. Furthermore, it is recommended that the rate of development is determined by testing the athletes over time. Finally, the specialisation in the specific kind of sport should start as early as possible.

References

- Conzelmann, A., Blank, M. & Künstle, C. (2006). Karriereverläufe im Spitzentennis. In K. Weber, D. Augustin, P. Maier & K. Roth (Hrsg.), *Wissenschaftlicher Transfer für die Praxis der Sportspiele. Wissen-schaftliche Berichte und Materialien des Bundesinstituts für Sportwis-senschaft*, 09/2006 (S. 280-285). Köln: Sport und Buch Strauss.
- Marconi, M. (2008). *Sportliche Karrieren im alpinen Skirennsport*. Unveröffentlichte Lizentiatsarbeit, Universität Bern, Institut für Sportwis-senschaft.
- Mayer, K. U. (1990). Lebensläufe und sozialer Wandel. Anmerkungen zu einem Forschungsprogramm. In K. U. Mayer (Hrsg.), *Lebensver-läufe und sozialer Wandel* (S. 7-21). Opladen: Westdeutscher Verlag.
- Ericsson, K. A. (1996). The Acquisition of Expert Performance: An Introduction to Some of the Issues. In K. A. Ericsson (Ed.), *The road to Excellence. The Acquisition of Expert Performance in the Arts and Sciences, Sports and Games* (p. 1-50). Mahwah: Lawrence Erlbaum Associates.

THE MODERATING EFFECTS OF GENDER AND SPORT TYPE ON THE RELATIONSHIP BETWEEN CONFIDENCE TO AVOID DRINKING AND BINGE DRINKING IN SPORTS SCIENCE STUDENTS

OH, H.J., TAYLOR, A.H.

UNIVERSITY OF EXETER

Introduction: Binge drinking (ie, ≥ 5 drinks per occasion) is a major health issue among student populations, particularly for males in team sports (Brenner & Swanick, 2007). Confidence to inhibit drinking in different situations is negatively related to excessive drinking (Oei & Morawska, 2004), and alcohol awareness campaigns seek to build avoidance self-efficacy (A-SE). However, it is not known if this relationship is consistent for male and females, and athletes in different sports. In this study we examined the moderating effects of gender and sport type (team, individual and non sport participation) on the relationship between A-SE and binge drinking.

Methods

First year undergraduate sports science students ($N=354$; 54% male), completed questionnaires to assess sport participation, A-SE, using the revised (multi-scale) Drinking Refusal SE Questionnaire (in different situations) (DRSEQ-R) (Oei et al., 2005), confidence to avoid alcohol (CTAA) (0-100% over 1-2, 3-4, ... 13-14 days) (Bandura, 2006) and binge drinking.

Results: Multiple regression analysis indicated that DRSE under social pressure scale ($\beta=.13$, $R^2=.21$, $p<.01$) was the main predictor of binge drinking and was not moderated by gender and sport type. However, the DRSE in opportunistic situations scale ($\beta=.01$, $R^2=.31$, $p<.05$) and confidence to go without drinking for 13-14 days ($\beta=.05$, $R^2=.33$, $p<.05$) were found to be significant predictors of binge drinking for male, but not for female students. CTAA for 13-14 days predicted binge drinking for team sport and non-sport par-ticipating students, but didn't for those in individual sports.

Discussion: This is the first study to exam the moderating role of gender and sport type on the relationship confidence to restrain from drinking in different situations and binge drinking. Male sports science students with low A-SE to avoid drinking, particularly with others, and also when it is readily available, are more likely to binge drink. Interventions could be targeted at increasing A-SE in social and op-portunistic situations to prevent binge drinking. In contrast there was only support for targeting interventions at increasing A-SE in social situations for females. Interventions targeted at increasing A-SE in social situations appear as relevant for team, individual and non sport students. Males, and team and non-sport participants, appear more susceptible to binge drink if they have less confidence in prolonged abstinence.

References

- Brenner J., & Swanick, K. (2007). *Journal of American College Health*, 56, 267-272.
- Oei TPS Morawska A. (2004). *Addict Behav*, 29, 159-179.
- Oei TPS, Hasking PA, Young RM. (2005). *Drug Alc Depend*, 78, 297-307.
- Bandura A (2006). Self-Efficacy Beliefs of Adolescents, 307-338. *Information Age Pubs*, Charlotte, NC.

EFFECTS OF A COGNITIVE-BEHAVIOURAL INTERVENTION PROGRAMME ON THE ANXIETY LEVEL AND PERFORMANCE OF GYMNASTS IN A COMPETITIVE ENVIRONMENT

SMYTH, P., MASTERSON, L., KEARNEY, P.

UNIVERSITY OF LIMERICK

Introduction: This study arose out of the concern of a gymnastics coach that her gymnasts were underperforming in competition due to anxiety. The purpose of the study was to assess the effects of a cognitive-behavioral intervention programme on performance, anxiety and confidence in the competitive sport environment.

Methods: Ten female gymnasts aged 12-17 yrs were pre-tested in a competitive sport environment for state anxiety and self confidence on the CSAI-2 test (Martens et al., 1990) and on balance beam performance. The competitive environment included an audience made up of parents, gymnasts, "march on" music and two qualified judges who scored performances. At a gymnastic camp on the following week all gymnasts underwent training which included practice on the balance beam. In addition half of the group underwent cognitive-behavioral training based on Suinn's (1994) visual motor behavior rehearsal (VMBR) programme. The other half of the group did not undergo this training and acted as a control. VMBR combines muscle relaxation, controlled breathing and use of mental imagery to visualise a relaxed scene, a successful competition scene previously experienced and an upcoming competition scene. As manipulation checks, gymnasts were asked to rate clarity of images, levels of relaxation and the feel of imaged movements. They were also asked to practice the procedures at home and to record comments in a log which would be discussed at the beginning of the next session. Participants were retested at the end of the week and again one week later (retention) in the same competitive environment as the pre-test.

Results: The intervention group showed significant improvements in performance on the balance beam along with reduced cognitive and somatic anxiety and increased confidence. The control group showed no improvements in performance and no changes in anxiety and confidence.